## DETAILED ACTION

### *Response to Amendment*

1. This communication is in response to Application's Amendment filed on 8/2/2011. Claims 1-80 and 117-127 had been cancelled, and claims 81-116 and 128-156 are pending.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 81, 94, 95, 97-99, 103-106, 128, 129, 137, 139, 140, 146, 147, 150, 151 and 156 are rejected under 35 U.S.C. 102(e) as being anticipated by Yi et al. (US Pat. No. 7,356,146 B2), hereinafter as Yi.

**Regarding claim 81**, Yi discloses a method of changing base stations from a source base station to a target base station, wherein the source base station is in communication with a source core network support node, and the target base station is in communication with a target core network support node **(Yi: from col. 13 lines 20 to col. 16 line 4)**, the method comprising the steps of: the source base station transferring packet switched communications between a mobile station and the source core network support node **(Yi: figure 5 and col. 6 line 29-44 where node b/RNC1 transferring packet switched communications between a UE and a SGSN1)**; the

source core network support node maintaining sequence number information for packets communicated to and from the mobile station; the source core network support node forwarding the maintained sequence number information to the target core network support node during the base station change **(Yi: col. 27 lines 43-col. 28 line 11 the PDCP send and receive sequence numbers are then transferred in the RNSAP Relocation Commit message from the source to the target RNC for RABs that support Iossless SRNS relocation. The target RNC becomes the serving RNC when the RANAP Relocation Detect message sent)**; and wherein the base station change is of a Iossless type allowing Iossless base station change of packet switched communications in unacknowledged mode **(Yi: col. 4 lines 14 unacknowledged mode (UM), col. 4 lines 22-29 UM mode and col. 5 lines 46-51)** between the mobile station and the core network support nodes **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)**.

**Regarding claim 94**, Yi teaches the base station change allows an entire data transfer session in unacknowledged mode **(Yi: col. 1 lines 45-60 and col. 17 lines 11-51 and col. 27 line to col. 28 line 11 on SRB#1 (UM/DCCH?, which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation)**.

**Regarding claim 95**, Yi teaches the data transfer session is a session of data file transfer **(Yi: col. 14 line 62 and col. 29 line 4)**.

**Regarding claim 97**, Yi teaches further comprising the step of recording one or more sequence numbers of one or more protocol data units in both uplink and downlink directions **(Yi: col. 18 line 20-26 sequence numbers are retrieved and col. 17 lines 11-62)**.

**Regarding claim 98**, Yi teaches the protocol data units are Network layer Protocol Data Units (N-PDUs) **(Yi: col. 12 line 2 PDU and col. 4 lines 60-66)**.

**Regarding claim 99**, Yi teaches the protocol data units are T-PDUs with GTP headers (G-PDUs) **(Yi: col. 12 line 2 PDU and col. 4 lines 60-66)**.

**Regarding claim 103**, Yi teaches the source core network support node connected to the source base station **(Yi: figures 5 and col. 6 lines 29-44)** or base station subsystem to be changed informs the mobile station, also connected to the base station or base station subsystem, of a next expected uplink protocol data unit to be received **(Yi: col. 17 line 11-51)**.

**Regarding claim 104**, Yi teaches the mobile station connected to the source base station or base station subsystem to be changed informs the source core network support node **(Yi: figures 5 and col. 6 lines 29-44)**, also connected to the base station or base station subsystem, of a next expected down-link protocol data unit to be received **(Yi: col. 17 line 11-51)**.

**Regarding claim 105**, Yi teaches the base station or base station subsystem relays the information between mobile station and the source core network support node **(Yi: figures 5 and col. 6 lines 29-44)** with no required processing of the information **(Yi: col. 17 line 11-51)**.

**Regarding claim 106**, Yi teaches wherein the source base station or base station subsystem is allowed to continue receiving uplink data while emptying downlink buffers as a response to a PS Handover Command **(Yi: col. 5 lines 30-35)**.

**Regarding claim 128**, Yi discloses a core network support node in a packet switched communications system including base stations for communications involving at least one mobile station **(Yi: from col. 13 lines 20 to col. 16 line 4)**, the core network support node **(Yi: from col. 13 lines 20 to col. 16 line 4)** comprising: processing means operating according to one or more protocols for receiving protocol data units **(Yi: col. 8 lines 21-24)**, the processing means extracting information for the core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** to inform a mobile station of next expected uplink protocol data unit in association with packet switched base station change **(Yi: col. 17 lines 11-62)** in unacknowledged mode of the at least one mobile station **(Yi: col. 1 lines 45-60 and col. 17 lines 11-51, col. 4 line 14 unacknowledged mode (UM), and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH?, which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support lossless SRNS relocation)**.

**Regarding claim 129**, Yi discloses a core network support node in a packet switched communications system including base stations for communications involving at least one mobile station **(Yi: from col. 13 lines 20 to col. 16 line 4)**, the core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** comprising: processing means operating according to one or more protocols for transferring protocol data units **(Yi: col. 8 lines 21-24)**; and, a receiver for receiving informing from the at least one mobile station on a next expected downlink protocol

data unit in association with packet switched handover to allow Iossless base station change **(Yi: col. 17 lines 11-62)** in unacknowledged mode of packet switched communications **(Yi: col. 1 lines 45-60 and col. 17 lines 11-51, col. 4 line 14 unacknowledged mode (UM), and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH?, which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation)**.

**Regarding claim 137**, Yi teaches a protocol entity of the support node maintains sequence continuity **(Yi: col. 17 lines 11-62)** over the core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)**.

**Regarding claim 139**, Yi teaches upon completion of a packet switched base station change, the core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** sustaining a changed to base station starts transmissions of protocol data units to the at least one mobile station at the next protocol data unit expected by the at least one mobile station **(Yi: col. 17 lines 11-62)**.

**Regarding claim 140**, Yi teaches further comprising receive means, the transmissions being started upon the receive means receiving a PS Handover Complete message **(Yi: col. 8 line 21-31)**.

**Regarding claim 146**, Yi teaches the information on next expected protocol data unit is transferred in a message initiating or completing a change of base station or handover as regards the at least one mobile station **(Yi: col. 17 lines 11-62)**.

**Regarding claim 147**, Yi teaches wherein the message initiating or completing a change of base station or handover is a PS Handover Command or PS Handover Complete message **(Yi: col. 8 line 21-31)**.

**Regarding claim 150**, Yi teaches the core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** is a Serving GPRS Support Node (SGSN) **(Yi: col. 6 line 38-40)**.

**Regarding claim 151**, Yi discloses a source base station entity in a packet switched communications system having at least one core network support node for communications **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** involving at least one mobile station, the base station entity **(Yi: col. 13 lines 20 to col. 16 line 4)** comprising: receive means, transmit means and buffer means **(Yi: figure 1 and col. 17 lines 33-66)**, wherein the buffer means buffers downlink protocol data units, the buffer means being emptied of protocol data units destined for the at least one mobile station **(Yi: col. 5 line 30-35 and lines 46-51)**, the protocol data units being transmitted by the transmit means upon the receive means receiving a command of packet switched base station change **(Yi: col. 27 lines 43-col. 28 line 11 the PDCP send and receive sequence numbers are then transferred in the RNSAP Relocation Commit message from the source to the target RNC**

**for RABs that support lossless SRNS relocation. The target RNC becomes the serving RNC when the RANAP Relocation Detect message sent)** in unacknowledged mode **(Yi: col. 4 lines 14 unacknowledged mode (UM), col. 4 lines 22-29 UM mode and col. 5 lines 46-51)**, as regards the one mobile station, from the at least one core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)**.

**Regarding claim 156**, Yi teaches the receive means receives uplink packet data from the at least one mobile station while the buffer means is emptied of protocol data units destined for the at least one mobile station **(Yi: col. 5 lines 30-35)**.

***Claim Rejections - 35 USC § 103***

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 82-93, 96, 130-136 and 152-155 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US Pat. No. 7,356,146 B2), hereinafter as Yi, in view of Heden (US Pub. No. 2006/0165027 A1).

**Regarding claim 82**, Yi teaches a protocol entity in the source core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** maintains Network layer Protocol Data Unit (N-PDU) send and receive sequence numbers **(Yi: col. 17 lines 11-62)** and uplink and downlink sequence numbers for each packet flow subject to base station change of Iossless type **(Yi: col. 1 lines 45-60 and col. 17 lines 11-51 and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH), which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation).** Yi disclose all the subject matter of the claimed invention with the exception of: GPRS Tunneling Protocol Transport

Packet Data Unit (GTP T-PDU). Heden from the same or similar fields of endeavor teaches the use of: the GPRS tunneling protocol (GTP) tunnels the PDUs through the GPRS backbone network 52 by adding routing information **(see Heden paragraph 26)**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(see Heden paragraph 21)**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the GTP PDU as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for enabling different packet data protocols to be employed even when those protocols are not supported by all the SGSNs **(Heden: paragraph [0023]).**

**Regarding claim 83**, Yi teaches downlink N-PDU and downlink GTP T-PDU sequence numbers are provided along with each N-PDU forwarded **(see Yi col. 17 lines 11-62)**from the source core network support node to the target core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)**. Yi disclose all the subject matter of the claimed invention with the exception of: GTP T-PDU. Heden from the same or similar fields of endeavor teaches the use of: the GPRS tunneling protocol (GTP) tunnels the PDUs through the GPRS backbone network 52 by adding routing information **(Heden: paragraph [0026])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the

invention to use the GTP PDU as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for enabling different packet data protocols to be employed even when those protocols are not supported by all the SGSNs **(Heden: paragraph [0023]).**

**Regarding claim 84**, Yi teaches buffered in the source base station, which data has not been sent to, or acknowledged by, the mobile station at the point in time when the source base station sends the packet switched handover command message to the mobile station, is deleted **(Yi: col. 4 lines 36-50 and col. 5 lines 30-35)**. Yi disclose all the subject matter of the claimed invention with the exception of: Logical Link Control (LLC) data. Heden from the same or similar fields of endeavor teaches the use of: The logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**.

**Regarding claim 85**, Yi teaches a status message is sent back to the source core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6**

**where UM is supported for relocation)** telling it how many PDUs have been detected **(see Yi col. 5 lines 30-35)**. Yi disclose all the subject matter of the claimed invention with the exception of: LLC data. Heden from the same or similar fields of endeavor teaches the use of: The logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**.

**Regarding claim 86**, Yi teaches the status message provides part of the one or more deleted PDUs **(Yi: col. 5 lines 51-59)**. Yi disclose all the subject matter of the claimed invention with the exception of: LLC data. Heden from the same or similar fields of endeavor teaches the use of: The logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so

for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**.

**Regarding claim 87**, Yi teaches the status message provides the header of the one or more deleted PDUs **(Yi: col. 5 lines 51-59)**. Yi disclose all the subject matter of the claimed invention with the exception of: LLC data. Heden from the same or similar fields of endeavor teaches the use of: The logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**.

**Regarding claim 88**, Yi teaches a set of N-PDUs sent down to the source BSS are buffered **(Yi: col. 4 lines 43-44)** in the source core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** telling it how many PDUs have been detected **(see Yi col. 5 lines 30-35)**for each packet flow subject to Iossless PS handover **(Yi: col. 1 lines 45-60 and col. 17 lines 11-51 and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH), which configures the UE with the new**

**U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation**).

**Regarding claim 89**, Yi teaches a PS handover command message contains a Radio Link Control Acknowledgement/Negative acknowledgement (RLC ACK/NACK) report allowing a mobile station to determine which one or more N-PDUs have been completely received by the network **(Yi: col. 4 lines 36-50)**.

**Regarding claim 90**, Yi teaches a mobile station starts uplink transmission, upon handover to a target cell, by an estimated next uplink N-PDU that was not acknowledged by lower layers in a source cell from which the mobile station was handed over to the target cell **(Yi: col. 1 lines 45-60 and col. 17 lines 11-51 and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH), which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation**).

**Regarding claim 91**, Yi teaches a PS handover command sent from the support node to a source BSS includes an expected Receive N- PDU sequence number **(Yi: col. 17 line 11-51)** at which a mobile station should start transmission in a target cell for each uplink packet flow subject to Iossless handover **(Yi: col. 1 lines 45-60 and col. 17 lines 11-51 and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH), which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation**).

**Regarding claim 92**, Yi teaches a mobile station buffers one or more uplink N-PDUs which have been confirmed according to Radio Link Control (RLC) **(Yi: col. 18 lines 23-24 sequence numbers are retrieved and col. 18 line 1 UM RLC)**.

**Regarding claim 93**, Yi teaches uplink and downlink T-PDU with GTP header (G-PDU) sequence numbers associated with uplink and downlink N-PDUs are recorded while in unacknowledged mode between the mobile station and the support node **(Yi: col. 18 lines 23-24 sequence numbers are retrieved)**.

**Regarding claim 96**, Yi teaches the packet switched communications in unacknowledged mode between the mobile station and the source core network **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** support node concerns unacknowledged mode **(Yi: col. 1 lines 45-60 and col. 17 lines 11-51 and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH?, which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation).** Yi discloses all the subject matter of the claimed invention with the exception of: LLC data. Heden from the same or similar fields of endeavor teaches the use of: The logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as

taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**.

**Regarding claim 130**, Yi teaches further comprising a protocol entity for maintaining N-PDU send and receive sequence numbers and uplink and downlink sequence numbers for each packet flow subject to base station change of Iossless type **(Yi: col. 1 lines 45-60 and col. 17 lines 11-51 and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH?, which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation)**, the support node acting as source support node during the base station change for forwarding maintained sequence number information to a target support node of the base station change **(Yi: col. 17 lines 11-62)**. Yi disclose all the subject matter of the claimed invention with the exception of: GTP T-PDU. Heden from the same or similar fields of endeavor teaches the use of: the GPRS tunneling protocol (GTP) tunnels the PDUs through the GPRS backbone network 52 by adding routing information **(Heden: paragraph [0026])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the GTP PDU as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for

enabling different packet data protocols to be employed even when those protocols are not supported by all the SGSNs **(Heden: paragraph [0023]).**

**Regarding claim 131**, Yi teaches further comprising processing means for providing downlink Network layer Protocol Data Unit (N-PDU) and downlink sequence numbers along with each N-PDU forwarded to the target support node **(Yi: col. 17 lines 11-62)**. Yi disclose all the subject matter of the claimed invention with the exception of: GPRS Tunneling Protocol Transport Packet Data Unit (GTP T-PDU). Heden from the same or similar fields of endeavor teaches the use of: the GPRS tunneling protocol (GTP) tunnels the PDUs through the GPRS backbone network 52 by adding routing information **(Heden: paragraph [0026])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the GTP PDU as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for enabling different packet data protocols to be employed even when those protocols are not supported by all the SGSNs **(Heden: paragraph [0023]).**

**Regarding claim 132**, Yi teaches further comprising a buffer for buffering a set of N-PDUs sent down to a source base station for each packet flow subject to Iossless packet switched handover **(Yi: col. 4 lines 37-50, and col. 1 lines 45-60 and col. 17 lines 11-51 and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH?, which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation)**.

**Regarding claim 133**, Yi teaches further comprising processing means for including a Radio Link Control Acknowledgment/Negative Acknowledgment (RLC ACK/NACK) report in a PS handover command message, thereby allowing a mobile station to determine which one or more N-PDUs have been completely received by the network **(Yi: col. 17 lines 11-62)**.

**Regarding claim 134**, Yi teaches a PS handover command sent from the support node to a source BSS includes an expected Receive N-PDU sequence number at which a mobile station should start transmission in a target cell for each uplink packet flow subject to Iossless handover **(Yi: col. 17 lines 11-62)**.

**Regarding claim 135**, Yi teaches further comprising recording means for recording uplink and downlink G-PDU sequence numbers associated with uplink and downlink N-PDUs while in unacknowledged mode between the mobile station and the support node **(Yi: col. 4 lines 37-50, and Yi col. 1 lines 45-60 and col. 17 lines 11-51 and col. 27 line to col. 28 line 4 on SRB#1 (UM/DCCH?, which configures the UE with the new U-RNTI and indicated the uplink receive PDCP sequence number for each radio bearer configured to support Iossless SRNS relocation)**.

**Regarding claim 136**, Yi teaches the base station change is within or between UTRAN **(Yi: col. 20 lines 26-47)**. Yi disclose all the subject matter of the claimed invention with the exception of: a GSM-EDGE Radio Access Network (GERAN). Heden from the same or similar fields of endeavor teaches the use of: GERAN **(Heden: paragraph [0030])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of

ordinary skill in the art at the time of the invention to use the GERAN **(Heden: paragraph [0030])** as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for enabling different packet data protocols to be employed even when those protocols are not supported by all the SGSNs **(Heden: paragraph [0023]).**

**Regarding claim 152**, Yi teaches processing means for deleting buffered data that has not been sent to, or acknowledged by, the mobile station at the point in time when the source base station entity sends the packet switch handover command message to the mobile station **(Yi: col. 4 lines 36-50 and col. 5 lines 30-35).** Yi disclose all the subject matter of the claimed invention with the exception of: Logical Link Control (LLC) data. Heden from the same or similar fields of endeavor teaches the use of: The logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**.

**Regarding claim 153**, Yi teaches further comprising sending means for sending a status message back to the source core network support node **(Yi: figures 1, 5, and 6, and col. 6 line**

**29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** telling it how many PDUs have been deleted **(Yi: col. 4 lines 36-50 and col. 5 lines 30-35).** Yi disclose all the subject matter of the claimed invention with the exception of: LLC data. Heden from the same or similar fields of endeavor teaches the use of: The logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**.

**Regarding claim 154**, Yi teaches the status message provides part of the one or more deleted PDUs **(Yi: col. 4 lines 36-50 and col. 5 lines 30-35);** and,
Yi disclose all the subject matter of the claimed invention with the exception of: LLC data. Heden from the same or similar fields of endeavor teaches the use of: The logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph**

**[0021]**). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**.

**Regarding claim 155**, Yi teaches the status message provides the header of the one or more deleted PDUs **(Yi: col. 4 lines 36-50 and col. 5 lines 30-35).** Yi disclose all the subject matter of the claimed invention with the exception of: LLC data. Heden from the same or similar fields of endeavor teaches the use of: The logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; Multiple base stations 32 are connected to a Base Station Controller (BSC) 34 which manages allocation/deallocation of radio resources and controls handovers of mobile stations from one base station to another **(Heden: paragraph [0021])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as taught by Heden in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**.

7. Claims 100-102, 107, 108, 113-115, 138, 141-144, 148 and 149 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US Pat. No. 7,356,146 B2), hereinafter as Yi, in view of Puuskari (US Pat. No. 6,728,208 B1).

**Regarding claim 100**, Yi teaches sequence continuity is maintained across a support node involved in packet switched base station change **(Yi: col. 17 lines 11-62).** Yi disclose all the subject matter of the claimed invention with the exception of: Subnetwork Dependent Convergence Protocol (SNDCP). Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**.
Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the SNDCP, SN-UNITDATA as taught by Puuskari in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for allowing very flexible and easy way to provide a certain QoS to applications **(Puuskari: col. 3 lines 54-56)**.

**Regarding claim 101**, Yi teaches one or more protocol data units include one or more N-PDU **(Yi: col. 17 lines 11-62).** Yi disclose all the subject matter of the claimed invention with the exception of: SNDCP Unitdata (SN-UNITDATA). Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is

a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the SNDCP, SN-UNITDATA as taught by Puuskari in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for allowing very flexible and easy way to provide a certain QoS to applications **(see Puuskari col. 3 lines 54-56)**.

**Regarding claim 102**, Yi teaches an N-PDU number is included in a header of each protocol data unit **(see Yi col. 17 lines 11-62).** Yi disclose all the subject matter of the claimed invention with the exception of: SNDCP Unitdata (SN-UNITDATA). Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first

data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**.

**Regarding claim 107**, Yi teaches the protocol data units are compliant with **(see Yi col. 17 lines 11-62).** Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the SNDCP, SN-UNITDATA as taught by Puuskari in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for allowing very flexible and easy way to provide a certain QoS to applications **(Puuskari: col. 3 lines 54-56)**.

**Regarding claim 108**, Yi teaches entities in a source support node buffers one or more downlink N-PDUs **(Yi: col. 17 lines 11-62).** Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is a

transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the SNDCP, SN-UNITDATA as taught by Puuskari in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for allowing very flexible and easy way to provide a certain QoS to applications **(Puuskari: col. 3 lines 54-56)**.

**Regarding claim 113**, Yi teaches one or more downlink N-PDUs are buffered in entities in a target support node **(see Yi col. 17 lines 11-62).** Yi disclose all the subject matter of the claimed invention with the exception of: SNDCP Unitdata (SN-UNITDATA). Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first

data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**.

**Regarding claim 114**, Yi teaches the target support node buffers a number of uplink N-PDUs corresponding to the number of N-PDUs received from the source support node **(see Yi col. 17 line 11-51)**.

**Regarding claim 115**, Yi teaches one or more uplink N-PDUs are buffered in entities in a mobile station **(see Yi col. 17 lines 11-62).** Yi disclose all the subject matter of the claimed invention with the exception of: SNDCP Unitdata (SN-UNITDATA). Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**.

**Regarding claim 138**, Yi teaches wherein the protocol entity operates **(see Yi col. 17 lines 11-62).** Puuskari from the same or similar fields of endeavor teaches the use of:

Subnetwork Dependent Convergence Protocol (SNDCP) is a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the SNDCP, SN-UNITDATA as taught by Puuskari in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for allowing very flexible and easy way to provide a certain QoS to applications **(Puuskari: col. 3 lines 54-56)**.

**Regarding claim 141**, Yi teaches wherein the protocol data units are compliant **(see Yi col. 17 lines 11-62).** Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first data octet (or in the first two octets, if all three

parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the SNDCP, SN-UNITDATA as taught by Puuskari in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for allowing very flexible and easy way to provide a certain QoS to applications **(Puuskari: col. 3 lines 54-56)**.

**Regarding claim 142**, Yi teaches the processing means records, N- PDU sequence numbers of N-PDUs received or transferred **(see Yi col. 17 lines 11-62).**

Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the SNDCP, SN-UNITDATA as taught by Puuskari in the relocating SRNS in a mobile

communication system of Yi. One of ordinary skill in the art would be motivated to do so for allowing very flexible and easy way to provide a certain QoS to applications **(Puuskari: col. 3 lines 54-56)**.

**Regarding claim 143**, Yi teaches the processing means records, G-PDU sequence numbers of G-PDUs received or transferred **(see Yi col. 17 lines 11-62).**

Puuskari from the same or similar fields of endeavor teaches the use of: Subnetwork Dependent Convergence Protocol (SNDCP) is a transmission functionality maps network-level characteristics onto the characteristics of the underlying network. SNDCP is specified in GSM 04.65. **(Puuskari: col. 8 lines 62-65)**; The HLR of a roaming MS may be in a different mobile communication network than the serving SGSN **(Puuskari: col. 8 lines 28-30)**; the MS adds the correct type of service and QoS information to the SNDCP data packets. This information may be included in the first data octet (or in the first two octets, if all three parameters, the service precedence, the delay class, and the reliability class are included). This octet comes after the DCOMP and PCOMP values in SN-Data PDUs and after the N-PDU number in SN-Unitdata PDUs **(Puuskari: col. 14 lines 8-15)**.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the SNDCP, SN-UNITDATA as taught by Puuskari in the relocating SRNS in a mobile communication system of Yi. One of ordinary skill in the art would be motivated to do so for allowing very flexible and easy way to provide a certain QoS to applications **(Puuskari: col. 3 lines 54-56)**.

**Regarding claim 144**, Yi teaches further comprising buffer means for buffering downlink N-PDUs **(see Yi col. 4 lines 37-50)**

**Regarding claim 148**, Yi teaches the buffered protocol data units are transferred upon packet switched base station change to a support node sustaining packet switched communications over the base station to which the at least one mobile station changed **(see Yi col. 4 lines 37-50)**.

**Regarding claim 149**, Yi teaches the buffered protocol data units are transferred upon completion**(Yi: col. 4 lines 37-50)** of a preparation phase of the packet switched base station change **(Yi: col. 8 line 21-31)**.

8. Claims 109-112 and 145 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US Pat. No. 7,356,146 B2), hereinafter as Yi, in view of Puuskari (US Pat. No. 6,728,208 B1) and further in view of Golitschek et al. (US Pub. No. 2006/0062167 A1), hereinafter as Golitschek.

**Regarding claims 109 and 145**, Yi teaches the source core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** and Puuskari disclose all the subject matter of the claimed invention with the exception of: (as per claim 109) the source support node buffers a number of N-PDUs corresponding to the delay attribute of the associated packet flow; or (as per claim 145) the buffer size is sufficiently large for a number of N-PDUs corresponding to a delay at-tribute of the associated packet flow. Golitschek from the same or similar fields of endeavor teaches the use of: calculate the overall PDU code rate, the average number of retransmissions per PDU or the average number of retransmissions per code word. If the code rates of the code words are fixed

the measurement unit 610 will preferably contain a memory for storing the code rates of each code word. As will be described in more detail below the measurement can be averaged over a number of PDUs or over a certain time. For this purpose, the measurement 610 is preferably provided with a filter function. Averaging is preferably applied depending on the round trip delay until retransmissions can be sent and depending on how fast channel conditions change. **(Golitschek: Paragraph [0050]).** Radio Network Controller RNC 210 which is responsible for the Handover decisions that require signaling to the User Equipment UE 120 **(Golitschek: Paragraph [0004]).** Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the number of PDU that can contain in a memory calculated by the round trip delay as taught by Golitschek in the modified relocating SRNS in a mobile communication system of Yi and Puuskari. One of ordinary skill in the art would be motivated to do so Provides an adaptive coding scheme with incremental redundancy **(Golitschek: Paragraph [0030]).**

**Regarding claim 110**, Yi and Puuskari teach the buffered N-PDUs are forwarded to a target core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)**during the base station change **(Yi: col. 4 lines 36-50)**.

**Regarding claim 111**, Yi and Puuskari teach the received forwarded N-PDUs in target core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network,**

**and col. 18 lines 4-6 where UM is supported for relocation)** are forwarded to the mobile station **(see Yi col. 17 line 11-51)**.

**Regarding claim 112**, Yi and Puuskari teach the one or more N-PDUs are forwarded to the mobile station when the source core network support node **(Yi: figures 1, 5, and 6, and col. 6 line 29-44 where UE switching/relocating from one SGSN to another SGSN which are both of a core network, and col. 18 lines 4-6 where UM is supported for relocation)** has received a PS Handover Complete message **(Yi: col. 8 lines 21-31)**.

9. Claims 116 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US Pat. No. 7,356,146 B2), hereinafter as Yi, in view of Puuskari (US Pat. No. 6,728,208 B1) and further in view of Heden (US Pub. No. 2006/0165027 A1) and Golitschek et al. (US Pub. No. 2006/0062167 A1), hereinafter as Golitschek.

**Regarding claims 116**, Yi in view of Puuskari teach the mobile station buffers a of N-PDUs **(Yi: col. 4 lines 36-50).** Yi in view of Puuskari disclose all the subject matter of the claimed invention with the exception of: number of N-PDUs corresponding to the maximum delay of RLC/MAC acknowledgement of transmission of LLC PDU. Heden from the same or similar fields of endeavor teaches the use of: the logical link control (LLC) layer operates above the MAC layer and provides a logical link between the mobile host and the SGSN **(Heden: paragraph [0028])**; and variation delay between a minimum and maximum delay time that a message experiences **(Heden: paragraph [0029])**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the LLC data as taught by Heden in the relocating SRNS in a mobile communication system of Yi in view of Puuskari. One of ordinary

skill in the art would be motivated to do so for Provides functionalities like multiplexing of network layer message onto a single virtual logical connection, ciphering, segmentation, and compression **(Heden: paragraph [0027])**. Golitschek from the same or similar fields of endeavor teaches the use of: calculate the overall PDU code rate, the average number of retransmissions per PDU or the average number of retransmissions per code word. If the code rates of the code words are fixed the measurement unit 610 will preferably contain a memory for storing the code rates of each code word. As will be described in more detail below the measurement can be averaged over a number of PDUs or over a certain time. For this purpose, the measurement 610 is preferably provided with a filter function. Averaging is preferably applied depending on the round trip delay until retransmissions can be sent and depending on how fast channel conditions change **(Golitschek: Paragraph [0050]).** Radio Network Controller RNC 210 which is responsible for the Handover decisions that require signaling to the User Equipment UE 120 **(Golitschek: Paragraph [0004]).** Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the number of PDU that can contain in a memory calculated by the round trip delay as taught by Golitschek in the modified relocating SRNS in a mobile communication system of Yi in view of Puuskari and Heden. One of ordinary skill in the art would be motivated to do so Provides an adaptive coding scheme with incremental redundancy **(Golitschek: Paragraph [0030]).**

***Response to Arguments***

10. Applicant's arguments, see Remarks, filed 8/2/2011, with respect to Claim Objections have been fully considered and are persuasive. The Claim Objections of claims82, 84, 89, 99, 100, 102, 136, 145 and 150 has been withdrawn.

Applicant's arguments, see Remarks, filed 8/2/2011, with respect to 112 2nd Rejection have been fully considered and are persuasive. The 112 2nd Rejection of Claim 109 has been withdrawn.

Applicant's arguments filed 8/2/2011 have been fully considered but they are not persuasive.

**With regard to applicant's remark for claims 81, 128, 129 and 151 (page 14)**, applicant submits that Yi fails to teach RNCs which located in the radio access network, not the core network. However, Yi in figures 1, 5, and 6, and col. 6 line 29-44 teaches that the UE switching/relocating from one SGSN to another SGSN which are both of a core network. Therefore Yi teaches the limitation and thus rejection respectfully remains.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Purkayastha et al. (US Pub. No. 2007/0249390 A1): wireless transmit/receive unit (WTRU) for communication in a first and a different second type of wireless networks. The WTRU includes respective components configured for wireless communication of user data with

the respective first and second type of wireless networks and an upper layer application processing component configured to process user data.

Chao et al (US Pub. No. 2009/0028111 A1): the number of PDUs stalled in the source Node B is large, the RLC will need to retransmit a large amount of PDUs, resulting in a longer latency of PDU transmission. The transmission delay may be increased further by any new data that is transmitted in the target cell prior to the lost PDUs in the source Node B are known to the sending RLC, since the Node B for each priority queue schedules transmissions as a FIFO regardless of whether the PDUs are initial transmissions or retransmissions (para. 9).

Lohr et al. (US Pub. No. 2007/0183451 A1) para. 24 or Petrovic et al. (US Pub. No. 2007/0155388 A1) para. 38: Node B and a user equipment allows for rapid retransmissions of erroneously received data units, and may thus reduce the number of RLC (Radio Link Control) retransmissions and the associated delays. This may improve the quality of service experienced by the end user.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WUTCHUNG CHU whose telephone number is (571)272-4064. The examiner can normally be reached on 9am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joe H. Cheng can be reached on (571) 272-4433. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WUTCHUNG CHU/
Examiner, Art Unit 2468

/Joe H Cheng/
Supervisory Patent Examiner
Art Unit 2468